

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property Organization
International Bureau

INTERNATIONAL PATENT COOPERATION TREATY (PCT)
 1. THE INTERNATIONAL PATENT COOPERATION TREATY (PCT) IS A TREATY WHICH
 2. WAS CONCLUDED AT WASHINGTON, D.C. ON 19.6.1978.
 3. IT ENTERED INTO FORCE ON 24.10.1978.
 4. THE TREATY IS NOW IN FORCE FOR THE FOLLOWING STATES:
 5. ALGERIA, ARGENTINA, AUSTRALIA, AUSTRIA, BELGIUM, BRAZIL, CANADA,
 6. CHINA, CUBA, CYPRUS, CZECH REPUBLIC, DENMARK, ECUADOR, EGYPT,
 7. FINLAND, FRANCE, GERMANY, GREECE, HONG KONG, HUNGARY, INDIA,
 8. INDONESIA, ITALY, JAPAN, KAZAKHSTAN, KENYA, KUWAIT, KYRGYZSTAN,
 9. LATVIA, LEBANON, LITHUANIA, LUXEMBOURG, MACEDONIA, MALAYSIA,
 10. MALTA, MEXICO, MOROCCO, NETHERLANDS, NEW ZEALAND, NIGERIA,
 11. NORWAY, OMAN, PAKISTAN, PANAMA, PARAGUAY, PERU, POLAND, PORTUGAL,
 12. ROMANIA, RUSSIA, SAUDI ARABIA, SLOVAKIA, SLOVENIA, SOUTH AFRICA,
 13. SOUTH KOREA, SPAIN, SWEDEN, SWITZERLAND, SYRIAN ARAB REPUBLIC,
 14. TAIWAN, THAILAND, TRINIDAD AND TOBAGO, TUNISIA, TURKEY, UGANDA,
 15. UKRAINE, UNITED ARAB EMIRATES, UNITED KINGDOM OF GREAT BRITAIN
 16. AND NORTHERN IRELAND, UNITED STATES OF AMERICA, UZBEKISTAN,
 17. VIETNAM, YEMEN, ZAMBIA, ZIMBABWE.

(43) International Publication Date
10 April 2003 (10.04.2003)

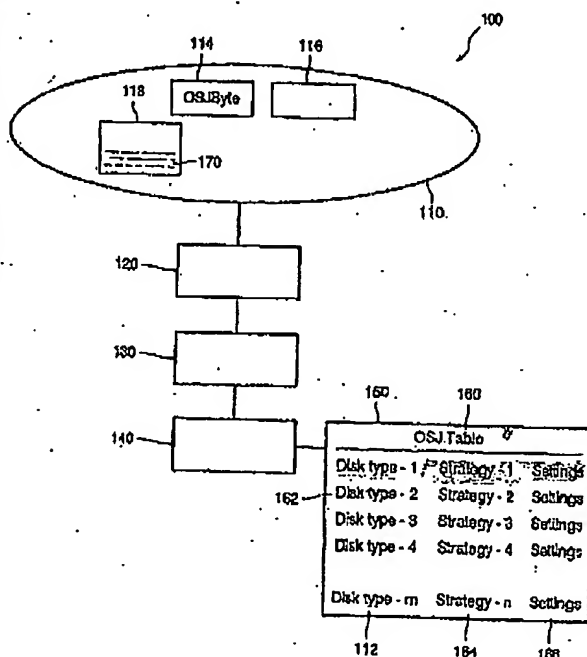
PCT

(10) International Publication Number
WO 03/030153 A3

- (51) International Patent Classification: G11B 7/0045, 7/125 (72) Inventors: SCHREURS, Gerard, E., N.; Prof. Holstlaan 6, NL-5656 AA Eindhoven (NL); LUYTEN, Geert; Prof. Holstlaan 6, NL-5656 AA Eindhoven (NL).
- (21) International Application Number: PCT/IB02/03850 (74) Agent: DEQUELLE, Wilhelmus, H., G.; Internationaal Octrooibureau B.V., Prof. Holstlaan 6, NL-5656 AA Eindhoven (NL).
- (22) International Filing Date: 18 September 2002 (18.09.2002) (81) Designated State (national): JP.
- (25) Filing Language: English (84) Designated States (regional): European patent (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IT, LU, MC, NL, PT, SE, SK, TR).
- (26) Publication Language: English
- (30) Priority Data: 01203655.4 27 September 2001 (27.09.2001) EP Published: — with international search report
- (71) Applicant: KONINKLIJKE PHILIPS ELECTRONICS N.V. [NL/NL]; Groenewoudseweg 1, NL-5621 BA Eindhoven (NL). (88) Date of publication of the international search report: 2 October 2003

[Continued on next page]

(54) Title: METHOD AND RECORDING DEVICE FOR SELECTING AN OPTIMIZED WRITE STRATEGY AND RECORDING MEDIUM FOR USE BY THE METHOD



(57) Abstract: The invention relates to a method and recording device for selecting an optimal write strategy for a specific type of optical recording disk. Such an optimal write strategy is selected even when the optical recording disk is of a type that has not been previously encountered or when the optical recording disk is otherwise unrecognized by an optical disk drive. The optimal write strategy and associated settings are selected from a set of write strategies stored in a disk drive. The disk drive bases its selection of the write strategy on the performance results of test writings conducted on the optical disk. The method entails testing the write strategies first at the maximum possible write speed and if necessary, at successively lower speeds until a write strategy that achieves a minimum acceptable write quality is identified or until the minimum write speed is reached. The selected optimal write strategy may be stored in the recording device or, alternatively, on the optical recording disk itself.

WO 03/030153 A3

INTERNATIONAL SEARCH REPORT

 National Application No
 PCT/IB 02/03850

| A. CLASSIFICATION OF SUBJECT MATTER IPC 7 G11B7/0045 G11B7/125 | | |
|---|---|--|
| According to International Patent Classification (IPC) or to both national classification and IPC | | |
| B. FIELDS SEARCHED Minimum documentation searched (classification system followed by classification symbols) IPC 7 G11B | | |
| Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched | | |
| Electronic data base consulted during the international search (name of data base and, where practical, search terms used) EP0-Internal, WPI Data, PAJ | | |
| C. DOCUMENTS CONSIDERED TO BE RELEVANT | | |
| Category * | Citation of document, with indication, where appropriate, of the relevant passages | Relevant to claim No. |
| X | US 6 134 209 A (DEN BOEF ARIE J) 17 October 2000 (2000-10-17) the whole document | 1,2,4,5, 8,9, 13-16 |
| Y | | 6,7 |
| X | US 5 872 763 A (OSAKABE KATSUICHI) 16 February 1999 (1999-02-16) abstract column 1, line 5 -column 2, line 27; claim 1 | 1-4,8,15 |
| Y | | 6,7 |
| X | EP 0 621 589 A (KONINKL PHILIPS ELECTRONICS NV) 26 October 1994 (1994-10-26) column 8, line 57 -column 9, line 24; figure 2 | 1,8,15 |
| -/- | | |
| <input checked="" type="checkbox"/> Further documents are listed in the continuation of box C. <input checked="" type="checkbox"/> Patent family members are listed in annex. | | |
| * Special categories of cited documents: "A" document defining the general state of the art which is not considered to be of particular relevance "E" earlier document but published on or after the international filing date "L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified) "O" document referring to an oral disclosure, use, exhibition or other means "P" document published prior to the international filing date but later than the priority date claimed "T" inter document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention "X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone "Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art "Z" document member of the same patent family | | |
| Date of the actual completion of the international search 19 March 2003 | | Date of mailing of the international search report 13. 06. 2003 |
| Name and mailing address of the ISA European Patent Office, P.B. 6818 Palatlaan 2 NL - 2260 HV Rijswijk Tel. (+31-70) 340-2040, Tx. 31 651 opa nl, Fax: (+31-70) 340-3018 | | Authorized officer ANNIBAL, S |

Form PCT/ISA/210 (second sheet) (July 1992)

INTERNATIONAL SEARCH REPORT

national Application No
PCT/IB 02/03850

| C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT | | |
|--|--|-----------------------|
| Category * | Citation of document, with indication, where appropriate, of the relevant passages | Relevant to claim No. |
| A | EP 0 902 424 A (HITACHI LTD) 17 March 1999 (1999-03-17) paragraph [0069] - paragraph [0070]; figure 4 | 1-3, 8, 15 |
| X | US 5 502 702 A (NAKAJO YUKIHISA) 26 March 1996 (1996-03-26) column 1, line 7 - line 55 | 1 |

Form PCT/ISA/210 (continuation of second sheet) (July 1992)

INTERNATIONAL SEARCH REPORT

International application No.
PCT/IB 02/03850**Box I Observations where certain claims were found unsearchable (Continuation of Item 1 of first sheet)**

This International Search Report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. ☐ Claims Nos.:
because they relate to subject matter not required to be searched by this Authority, namely:
2. ☐ Claims Nos.:
because they relate to parts of the International Application that do not comply with the prescribed requirements to such an extent that no meaningful International Search can be carried out, specifically:
3. ☐ Claims Nos.:
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

Box II Observations where unity of invention is lacking (Continuation of Item 2 of first sheet)

This International Searching Authority found multiple inventions in this International application, as follows:

see additional sheet

1. ☐ As all required additional search fees were timely paid by the applicant, this International Search Report covers all searchable claims.
2. ☐ As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.
3. ☐ As only some of the required additional search fees were timely paid by the applicant, this International Search Report covers only those claims for which fees were paid, specifically claims Nos.:
4. ☒ No required additional search fees were timely paid by the applicant. Consequently, this International Search Report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:
1-9, 13-16 dependent on 8 or 9

Remark on Protest

- ☐ The additional search fees were accompanied by the applicant's protest.
- ☐ No protest accompanied the payment of additional search fees.

Form PCT/ISA/210 (continuation of first sheet (1)) (July 1998)

International Application No. PCT/IB 02/03850

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

This International Searching Authority found multiple (groups of) inventions in this international application, as follows:

1. Claims: 1-9, 13-16 dependent on 8 or 9

Method of selecting a write strategy from a set of write strategies by recording a test pattern using all the write strategies, in which at least two distinguishable sets of settings are applied for each write strategy.

2. Claims: 10-12, 13-16 dependent on 10-12

Method of selecting a write strategy from a set of write strategies by recording a test pattern at a first write speed, characterised in that the test is repeated at a lower write speed if none of the results of the first test achieve a minimum acceptable write quality.

INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No.

PCT/IB/02/03850

| Patent document cited in search report | | Publication date | Patent family member(s) | Publication date |
|---|---|---------------------|----------------------------|---------------------|
| US 6134209 | A | 17-10-2000 | US 5793737 A | 11-08-1998 |
| | | | CN 1214789 A | 21-04-1999 |
| | | | CN 1214790 A | 21-04-1999 |
| | | | EP 0888614 A1 | 07-01-1999 |
| | | | EP 0880778 A1 | 02-12-1998 |
| | | | WO 9825266 A1 | 11-06-1998 |
| | | | WO 9825267 A1 | 11-06-1998 |
| | | | JL 125635 A | 26-08-2001 |
| | | | JP 2000504466 T | 11-04-2000 |
| | | | JP 2000504467 T | 11-04-2000 |
| | | | TW 446937 B | 21-07-2001 |
| | | | US 5978351 A | 02-11-1999 |
| | | | ZA 9710932 A | 04-06-1999 |
| US 5872763 | A | 16-02-1999 | JP 3259642 B2 | 25-02-2002 |
| | | | JP 10054064 A | 06-03-1998 |
| EP 0621589 | A | 26-10-1994 | BE 1007029 A3 | 21-02-1995 |
| | | | DE 69418934 D1 | 15-07-1999 |
| | | | DE 69418934 T2 | 16-12-1999 |
| | | | EP 0621589 A1 | 26-10-1994 |
| | | | JP 6333235 A | 02-12-1994 |
| | | | US 5587980 A | 24-12-1996 |
| EP 0902424 | A | 17-03-1999 | JP 3323782 B2 | 09-09-2002 |
| | | | JP 11086291 A | 30-03-1999 |
| | | | EP 1304685 A2 | 23-04-2003 |
| | | | EP 0902424 A1 | 17-03-1999 |
| | | | US 2002054556 A1 | 09-05-2002 |
| | | | US 6236635 B1 | 22-05-2001 |
| | | | US 2003039192 A1 | 27-02-2003 |
| | | | US 2001043538 A1 | 22-11-2001 |
| US 5502702 | A | 26-03-1996 | JP 2725561 B2 | 11-03-1998 |
| | | | JP 7057378 A | 03-03-1995 |
| | | | JP 2783136 B2 | 06-08-1998 |
| | | | JP 7129960 A | 19-05-1995 |

Form PCTISA/210 (patent family names) (July 1992)

PAGE LEFT BLANK